<u>CLAIMS</u>

We claim:

1. A method for compressing image data, comprising the steps of:

decomposing the image data into code-blocks of coefficients using a transform, each code-block comprising a plurality of bit-planes from a most significant bit-plane to a least significant bit-plane; and

forming an encoded bit-stream by coding bit-planes of coefficient data in the code-blocks according to an arithmetic coding scheme in order to form an encoded bit-stream;

wherein coefficient data from at least one bit-plane is included in the encoded bit-stream without arithmetic coding.

2. A method as claimed in claim 1, wherein the arithmetic coding scheme operates in a plurality of coding passes, and wherein at least one of the arithmetic coding passes for the coefficient data from said at least one bit-plane is not performed during the image data compression.

3. A method as claimed in claim 2, wherein coefficient data from bit-planes

$$p < p_0 - K$$

are written directly into the encoded bit-stream without arithmetic coding, wherein p_0 denotes the most significant bit-plane of the code block in which any sample therein becomes contextually significant during arithmetic coding and K is an integer parameter.

4.   A method as claimed in claim 3, wherein $K = 3$.

5.   A method as claimed in claim 1, wherein the method for compressing image data is based on embedded block coding with optimized truncation and employs a Wavelet transform.

6.   An image data compression system, comprising:

a decomposition processor which decomposes the image data into code-blocks of coefficients using a transform, each code-block comprising a plurality of bit-planes from a most significant bit-plane to a least significant bit-plane; and

an arithmetic coder coupled to the decomposition processor which forms an encoded bit-stream by coding bit-planes of coefficient data in the code-blocks according to an arithmetic coding scheme;

wherein the arithmetic coder is constructed such that coefficient data from at least one bit-plane is not subjected to said arithmetic coding scheme so as to be included in the encoded bit-stream without arithmetic coding.

7.   An image data compression system as claimed in claim 6, wherein the arithmetic coding scheme operates in a plurality of coding passes, and wherein at least one of the arithmetic coding passes is bypassed for the coefficient data from said at least one bit-plane during the image data compression.

8.   An image data compression system as claimed in claim 7, wherein the arithmetic coder operates such that coefficient data from bit-planes

$$p < p_0 - K$$

are written directly into the encoded bit-stream without arithmetic coding, wherein p_0

denotes the most significant bit-plane of the code block in which any sample therein

becomes contextually significant during arithmetic coding and K is an integer

parameter.

9.   An image data compression system as claimed in claim 8, wherein $K = 3$.

10.   An image data compression system as claimed in claim 6, wherein the

arithmetic coder is based on embedded block coding with optimized truncation and

the decomposition processor employs a Wavelet transform.

11.   A compressed image data bit-stream formed from transform coefficients of

image data, wherein the bit-stream data structure includes arithmetically coded data

interleaved with raw transform coefficient data.